Little River
Lamprey River Watershed
New Hampshire

Mendums Pond Dam - Break Flood Delineations

July 1990

US Army Corps of Engineers
New England Division

MENDUMS POND DAM
DAM-BREAK FLOOD ANALYSIS

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1. PURPOSE AND SCOPE

This report is a continuation of a dam-break flood analysis, on the Mendums Pond Dam, completed by the U.S. Army Corps of Engineers, dated September, 1984. The study's objective is to delineate and quantify the extent of the probable inundation flood area in the event of a dam-break failure, so that such information is available for use in emergency planning. Mendums Pond Dam is located in Nottingham, New Hampshire. It is owned, operated and maintained by the Water Resources Board of New Hampshire. This study was not performed because of any known likelihood of a dam-break at Mendums Pond Dam. This study is limited to the accuracy of ten-foot-contour mapping.

Delineations were continued downstream to a point at which the inundation from a dam-break approximates that of a one-hundred year storm event. The limits of this study are shown on Plate 2.

2. AUTHORITY

Authority for U.S. Army Corps of Engineers participation in this effort is sanctioned by Section 206 of the 1960 Flood Control Act (Public Law 86-645) which states:

"... The Secretary of the Army, through the Chief of Engineers, Department of the Army, is hereby authorized to compile and disseminate information on floods and flood damages, including identification of areas subject to inundation by floods of various magnitudes and frequencies, and general criteria for guidance in the use of floodplain areas and to provide engineering advice to local interests for their use in planning to ameliorate the flood hazard..."

3. DAM DESCRIPTION

Identification No.	NH00133
Name of Dam:	Mendums Pond Dam
Town:	Nottingham
County and State:	Rockingham County, New Hampshire
Stream:	Little River

Mendums Pond Dam is 31 feet high, averages about 36 feet wide, and 440 feet long. Its maximun storage is 3,300 acre-feet. It is an earthen embankment contained between vertical dry masonry walls, spans the upper reach of the Little River, and is located in east central New Hampshire (Plate 1).

4. PERTINENT DATA

Data is taken from "Phase I Inspection Report" for Mendums Pond Dam, dated August, 1978.

a. Drainage Area The drainage area consists of 5.4 square miles (3,456 acres) of gently to steeply sloping wooded terrain.

b. Discharge at Damsite

(1) Outlet works (ports) - One lower gate, two feet high by four feet wide, and invert elevation 195 feet MSL; two upper gates, 1.8 feet high by 1.5 feet wide and invert elevation 209 feet MSL. Total gate capacity at spillway crest - 300 cfs at 219 feet MSL.

(2) Spillway capacity at maximum pool elevation - 1010 cfs at 226.4 feet MSL.

c. Elevation (feet above MSL, elevations are relative to assumes spillway elevation; see (5) below).

(1)	Top of Dam:	varies from 224.3 to 226.4
(2)	Test flood pool:	226.3
(3)	Recreation pool:	219
(4)	Spillway crest :	219
(5)	Upstream invert low-level port:	195
(6)	Stream bed at centerline of main dam:	195

d. Reservoir (miles)

(1)	Length of maximum pool:	1.5
(2)	Length of recreational pool:	1.5

e. Storage (acre-feet)

(1)	Recreational pool:	1,960 (spillway crest)
(2)	Top of dam :	3,300

f. Reservoir Surface (acres)

(1)	Top of dam (embankment):	310
(2)	Recreation pool:	209
(3)	Spillway crest:	209

g. Dam

(1)	Type:	earthen embankment placed between upstream and downstream vertical dry masonry walls.
(2)	Length:	440 feet
(3)	Height:	31 feet (structural height)
(4)	Top width:	ranges from 24 feet to 49 feet
(5)	Side slopes:	vertical

h. Spillway

(1) Type:	Overflow concrete weir, two feet high, with a crest width of one-and-one-half feet.
(2) Length of weir:	25 feet
(3) Crest elevation:	219 feet MSL
(4) Gates:	none
(5) U/S channel:	Mendums Pond
(6) Downstream channel:	The downstream channel is cut in bedrock with a shallow depth of sand, gravel, and boulders on the bottom.

j. Regulating Outlets - Three wooden gates are located over ports on the upstream face of the wall of the control shaft.

5. DOWNSTREAM COMMUNITY INFORMATION

Mendums Pond Dam is in the Town of Nottingham. Nottingham is located in Rockingham County, in southeastern New Hampshire. It is 18 miles from Exeter, and 22 miles from Portsmouth. Nottingham had a 1980 population of 1,952 persons, according to U.S. Census Bureau data, more than double that of 1970. Nottingham is a mostly residential community with some small businesses. Downstream of Mendums Pond Dam in Nottingham, is the Town of Lee, in Strafford County.

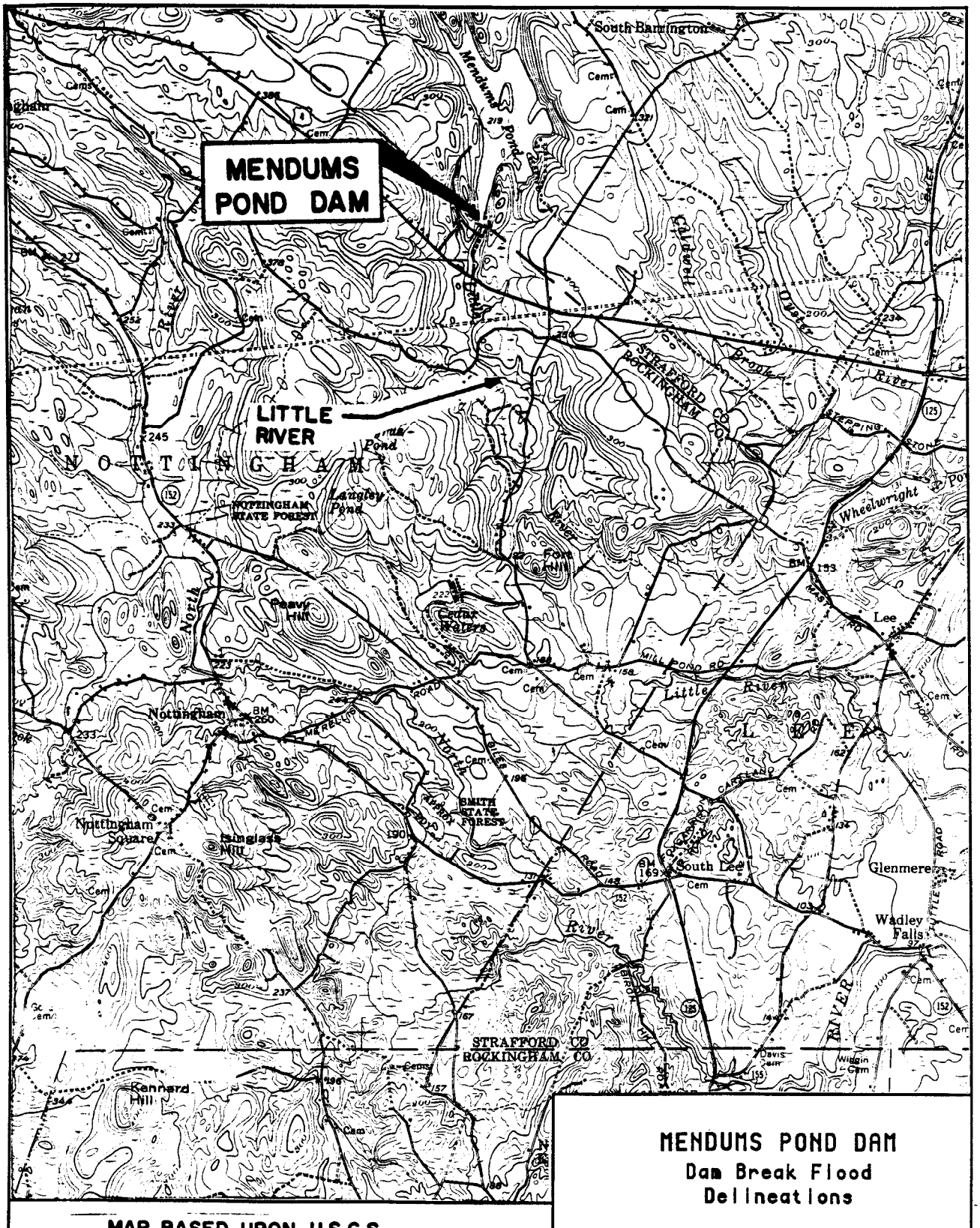
6. DESCRIPTION OF INUNDATED AREAS

a. REFERENCES. The inundation map for emergency action plan (Plate 2) is developed from the September 1984, Mendums Pond Dam-Break Flood Analysis, using an enlargement of the U.S.G.S. 7.5 minute (1 : 24000) Epping and Barrington Quadrangle maps, as revised in 1981.

b. DESCRIPTION OF IMPACTED AREA. The area of probable inundation in the event of a dam break at Mendums Pond Dam is rural with a scattered population. Downstream of the dam is mostly wooded area with a moderate slope. A dam, which impounds Nottingham Lake, is located downstream of the Mendums Pond Dam, at Mill Pond Road. Nottingham Lake is used for recreational purposes.

In the immediate area of Mendums Pond Dam is Mendum's Landing, where there is substantial new development. Most of the current structures are upstream of the dam, along Mendums Pond. The inundation area crosses to the other side of Route 4, where there is a bridge. Beyond Route 4, most of the affected area is along Smoke Street, and along Mill Road. Other areas affected contain mostly trees and brush. There is one house near a bridge, on Kennard Road.

Other bridges within the inundation area are on Smoke Street, Mill Pond Road, Kelsey Road (over Little River), and several on Route 155 and one on Tuttle Road. The probable inundation area is fairly narrow, until the dam at Nottingham Lake (at Mill Pond Road) after which, it widens out. The limits of the study are (as shown in Plate 2) at the confluence of Little River with Lamprey River.



MAP BASED UPON U.S.G.S
MT. PAWTUCKAWAY, N.H QUADRANGLE
1957 SCALE IN MILES

1 0 1

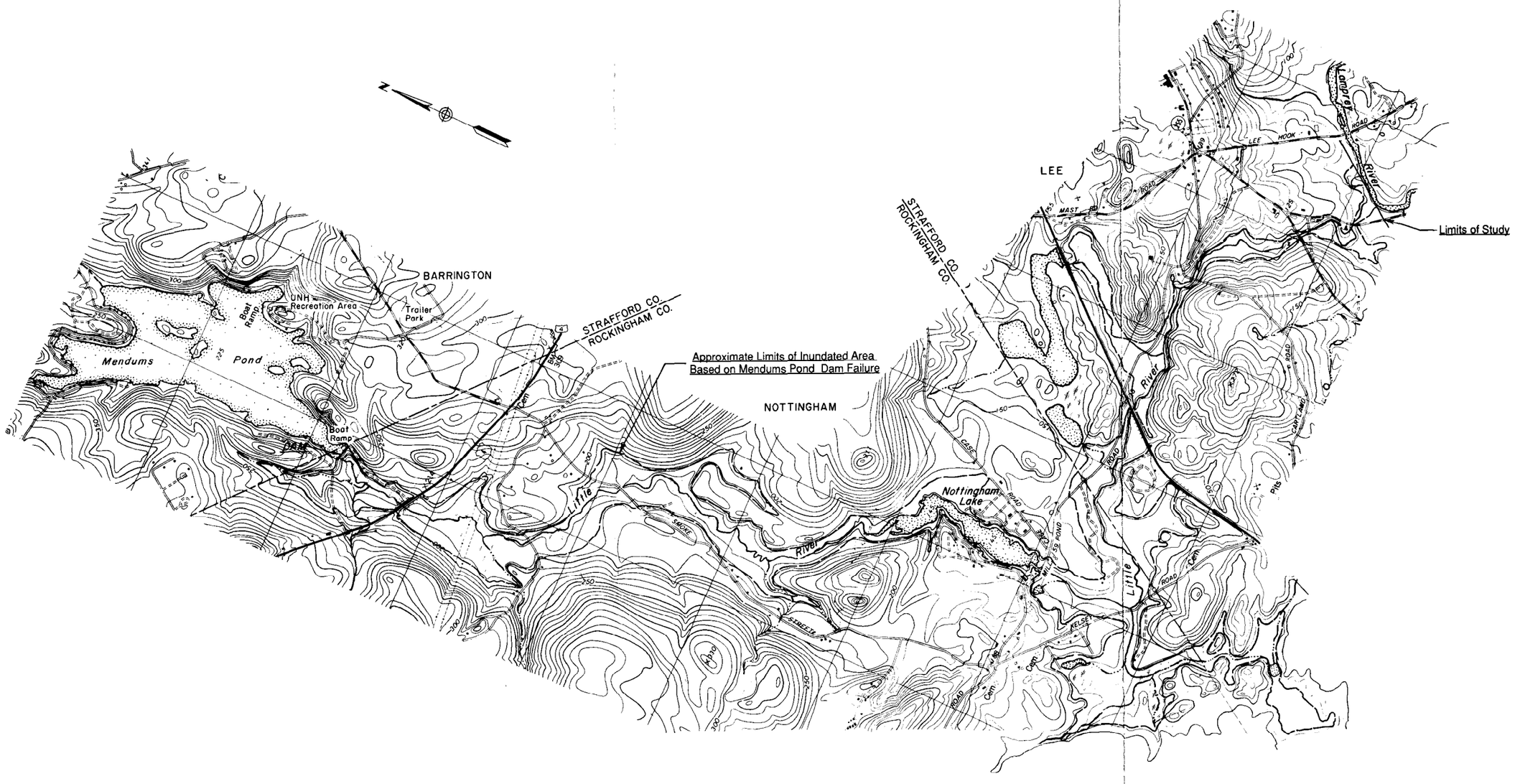
MENDUMS POND DAM

Dam Break Flood Delineations

Location Map

U.S. Army Corps of Engineers

Plate 1



NOTE:

Mapping is a photograhic enlargement of the U. S. G. S. 7.5 minute (1:24,000) Epping and Barrington Quadrangle maps, as edited in 1981.

SCALE IN FEET
1000' 0 1000' 2000'

PREPARED BY:

NEW ENGLAND DIVISION
U. S. ARMY CORPS OF ENGINEERS
WALTHAM, MASS.

FOR THE:

NEW HAMPSHIRE
WATER RESOURCES DIVISION
DEPARTMENT OF ENVIRONMENTAL SERVICES

INUNDATION MAP FOR EMERGENCY ACTION PLAN (EAP)

MENDUM POND DAM
N. H. NO. 184.01

DEC. 1989

PLATE 2